Menlo Park Notebook #145 [N-82-12-04]

This notebook covers the period December 1882-April 1884. The entries are by Edison, John Ott, Martin Force, Edward G. Acheson, George Gibbs, E. D. Kellogg, and H. de C. Hamilton. Many of the entries relate to carbon filament experiments and include notes and drawings of compound carbon filament lamps; carbons made from parchmentized paper, animal wastes, and foodstuffs such as flour, molasses, and gelatin; and chemical treating of filaments. There are also extensive notes and drawings of meter experiments, including meters using chemical paper. In addition, there are a few notes and drawings relating to safety catches, electro-vacuo experiments to produce gold foil for use in lamps, experiments on the absorption of materials, and battery experiments. The label on the front cover is marked "17th St & Ave B New York." The book contains 284 numbered pages.

Blank pages not filmed: 20-25, 120-121, 176-283.

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120 BROADWAY, NEW YORK.

From Library of
[illegible]
[illegible] Broadway
N.Y.
May 1, 1896

Dec. 4th & 5th /82. George Gibby. 3
Experiments with Induced Currents.

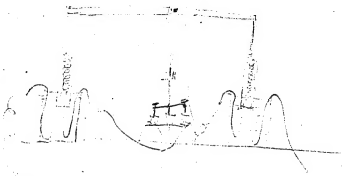


Fig. 1.

Used cyl with Common Stoneware
Spirals enamelled and [illegible]
The spirals were placed under
~~on~~ inverted glass tumblers which
were sealed in water [illegible]
The current [illegible] through one
coil heated [illegible]
the [illegible] cur, such as
the [illegible] Daniell battery the coil
of [illegible], effect the [illegible]
by [illegible] of [illegible]
[illegible] coil of [illegible]

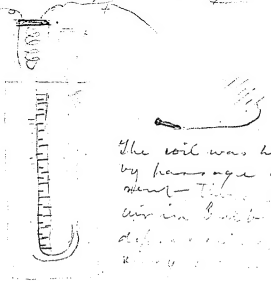
Dec 485 — G.G.

first - spiral and second - il - through [illegible].

The extended surface of these glass [illegible] also [illegible] to facilitate radiation of heat. [illegible]

Solution [illegible] Fe [illegible] & Ammonia [illegible] — [illegible]

Dec 8th /12. George Fibbs, 7



The coil was heated by passage of current — [illegible]

Dec. 21st/92. Langley Pitts.

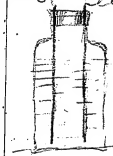
Experiments with Secondary Batteries. —

Made up a lot of small batteries of uniform size in following manner: — took two strips of lead gauge, ¼ inch wide & 3 inches long; coated both with layer of red-lead, and curved each into wooden bag. — Cell — Placed them in small vials, as shown. Different solutions were used in each, and the batteries charged for equal length of time. They were then electrolyzed through a sounder, thus giving comparative tests. — The following were tried with results given. Time of charging gen one hour.

Electrodes coated with red-lead.

Solution, caustic soda — no current.

Solution acetic acid — no current.



(over)

Dec 21st/12. 9.9. — Cont.

Solution, – Phosphoric Acid — No current. —

Solution, – Hydrochloric Acid — No current. —

Solution Nitrate Lead – No current. —

Solution (NaCl) common Salt, – No good. —

Solution Sulphuric Acid, – Strong current, but runs down rapidly, and entirely ceases in 30 seconds. –

Solution Chromic Acid – Momentary current. E.G. —

Solution Chromic Acid with Chromate of Lead on electrodes – No good – runs down very quickly. —

Dec. 22nd / 92. Gen. Gibbs.

Secondary Batteries. Crat.

Electrodes with red-lead: —
Solution Oxalic Acid —
No current. —

Solution Arsenic Acid —
Quite good results — runs down in about one minute. —
Solution Acetic Acid: — Electrodes lead coated with lead acetate. —
No current. —

Jan 3rd. —
Fresh weak solution of KI, with two copper plates — no g. —

Jan 3rd/73. G. Gibbs. —

Electro-Deposition of Carbon on platinum. —

Fused solution containing naphthalin and hydriodic acid with little free iodine.

This had to be fused here.

Did not? – burning; the sol. was a non-conductor of the current. —

Fused alone, for comparison, a sol. of bisulphide of Carbon, – also not work – a non-conductor. —

From Geo. Gibbs. —

Experiments with Absorption Materials, &c, to absorb oxygen from bulb & leave pure Nitrogen: —

Tried tubes filled with blotting paper, pellets saturated with a mixture of pyrogallic acid and caustic potash (pyrogallate of potash). The exp was not a success, because air was absorbed along with the oxygen, thus giving too little reading (long amount of oxygen absorbed) in fact distorting the accuracy of the reading device.

Tried alum suboxide of lead, obtained by igniting contrary oxalate of lead. The suboxide was moistened with water

(over)

have $\frac{1}{4}$ the $\frac{2}{3}$ to
when it rapidly $\frac{2}{3}$ to $\frac{1}{4}$ burned 19
ox & gave (theoretically) but
also air. this exp. failed
for the reason given
in last exp.

p.8.0 February 3 1883.

Twisted Platinum fibre Lamp or rather Compound filament lamp.

about 30 made & exhausted so far; those having greatest resistance of course best in front & fibre filaments stand while the Clamps melt from arcing = filament OK =

End. Copper plated & put on platinum Clamps. The resistance is such that one gives 10 Candle while a 95 Vacuum Lamp only

Came to yellow most
of them burned
with 185 Volts,

Solomon
M N Force
J.T.O

Feby 3 1883

We find that the principle of
making a filament for the
Lamps Compounded of Metal
Every Separate fibre is
Separately Expansible is
Correct and that this kind
of a filament can be made
Even cheap

Feby 3rd 1883 J.T.O

The fibres (Manila) are twisted by a machine then the fibre double & allowed to twist on itself - hence it does not open in Carbonizing - The Carbons of the Kind Carbonized at Lamp factory Cannot remuneratively been - owing to smallness & the high manufacturing which these Carbons are intended to be worked at Cannot the ploughing cost of the fibre

Feby 3 1883 708 g.50

now the only warranty
differently I have made
a great number of
Experiments on Lows
Vacuum in Connection
with the Compound
between the Exhaust
the Lamp to 27 inches
& then seal off & admit
Oxygen by heating
iron spirals were coated
with finely divided
iron The oxygen oxidizing
the finely divided iron

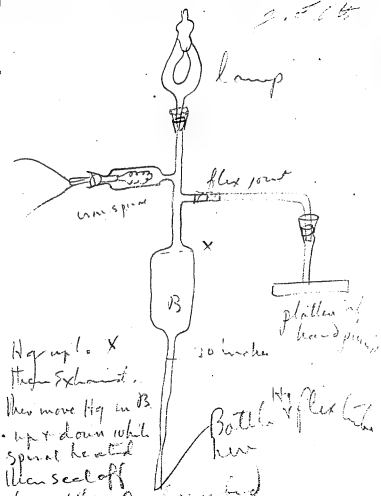
Feby 3 1883 Tag 9.50.

ism, but we have not succeeded in getting rid of all the Oxygen. We are now completing a device for supplying to mouth of the [illegible] the lamp + spirit lamp. Wire tight so as to [illegible] pressure [illegible] 4 pounds of the air to have access to the lamp [illegible]

over

Feby 3 1883 gas

2.514



July 2. 1883
M. A. Fisher
J. F. Otto

O. B. Kellogg

Experiment tried with chemical paper with the spark of an induction coil, for amperi meter to be used at central station

Iodide Potass wet Good mark but fades

Red Oxide Mercury wet Fair

Salt and Nitrate Silver & Fixed Good
dry

Nitrate Silver moist & Fixed Good

Salt & Nitrate Silver wet No Good

Iodide Potass dry No good

Salt & Silver Nitrate moist Fair
(Fixed)

Tanic acid wet Poor Mark

Acetate Uranium dry + Potass wet Nothing
Nothing

Gum Dextrin dry "
dry "
wet "

J. F. Otto July 2 1883 M. M. Jr

Amygdaline	wet	Nothing
	dry	"
Gallate Amonia	wet	Poor
Acetate Shoutia	dry	Nothing
	wet	Good
	dry	Nothing
Acetate of Nickle	wet	Good
	dry	~~Nothing~~ Has
Chloride Alumina	wet	Nothing
Citrate Magnesia	dry	"
	wet	"
	dry	"
Gum Gaacum + Caustic Pot	wet	Good
	dry	No
Carmine	wet	Poor
	dry	No
Lacto Phosphate Bismuth	wet	No
	dry	"
Arsenate Soda	wet	"
	dry	"
Pyro Phosphate Potassium	wet	"
	dry	"
Benzoate Ammonia	wet	Fair
	dry	[illegible]

E. D. Kellogg J. M. M. T. July 3

Tart Acid	wet	Nothing	
	dry	"	
Salt & Silver Nitrate dried two days			
fined with salt		Good	
Acetic Solution $KClO_3$ + Na Cl_2 + Co Cl_2			
wet Nothing dry burns holes			
Alum Acetic	wet	Nothing	
	dry	"	
Red Oxide of Pb	wet	"	
	dry	large holes	
" " Co. Cl_2	wet	No	
	dry	"	
" " Sulphate Lead	wet	"	
	dry	"	
" " Pb SO_4	wet	"	
	dry	"	
" " Chloride Cobalt Salt	wet	"	
	dry	"	
" " Co Cl_2 + $KClO_3$	wet	"	
	dry	"	
" " K_3 + Na Cl + Pyrogallic Acid	wet	Sun	
	dry	L. holes	
" " Na Cl	wet	No	
		Sun holes	

A D Pellegrz J. F. Ott July 3 1883

Salt + sesquioxide Iron + Pyrogallic Acid	wet No dry No	K I wet No
Pb SO_4 Burned on paper		
K I	wet Fair dry 2 holes	
Pb SO_4	dry Ok	
Tartaric Acid	wet No dry 2 holes	
Acetic Solution Sesquioxide of Iron	wet No dry "	
" " Chloride of Cobalt	wet No dry "	
" " K_3 + Na Cl	wet Burn mark fades dry No	
" " Iodide + Chloride Co + Na Cl	wet Good but it fades dry plain holes	
" " Salt Sesquioxide Fe	wet No dry Plain holes	

E D Hellwig July 7th 1883.

Acetic Solution	Na Cl + K ClO3	wet	Nothing
	J. F. Ott	dry	Plain holes
" "	K3	wet	Good mark
		dry	holes but not plain
" "	Chloride Cobalt Iodine	wet	No
		dry	Plain holes
" "	Chromic Oxide + Salt	wet	No
		dry	plain holes
" "	Chromic Oxide	wet	No
		dry	plain holes
" "	Na Br	wet	No
		dry	plain holes
" "	Na Cl	wet	No
		dry	plain holes
" "	Chromate of R	wet	No
		dry	Plain holes
" "	Soda Tartrate	wet	No
		dry	plain holes
	Mn SO4 + Alum	wet	Poor mark
		dry	Nothing

E B Ellogg July 3-1 583

$KClO_3$ J. F. ~~[illegible]~~ wet M. ~~[illegible]~~ Nothing
dry ,,

Protochloride Iron + Acetic Acid
wet No

Acetic Acid Sol wet No
dry plain holes

Protochloride Iron + Acetic Acid
dry plain holes

$(NH_4) + HS$ wet No

$CuSO_4 + Mn(SO_4)$ wet ~~[illegible]~~ Good
dry No

$Hg + C$ wet Iron mark
dry plain holes

$KSO_4 + Mn(SO_4)$ wet Iron marks
dry plain holes

Bromide Potash. not good with Point in contact with Paper but poor without
dry - Holes

C.D. Hullogg J. F. M. July 2 1883 M. D. T.

Tart. Magnesia wet Nothing
dry Nothing.

Nickel Sulphate wet Nothing
dry Nothing

Sesquioxide Iron wet Nothing
dry Holes

Nickel Sulph. + Caust Potash wet Noth
dry Nothing

Bromide Sodium wet good with
point in contact, dry Nothing

Iodine Resublimed wet good with
point in contact, dry Holes

Aniline Acetic wet good with
point touching paper. dry Nothing

Niccol. Acetic wet ~~fair~~ very good
dry holes

J. F. Otto	E. D. Hedges		July 3 1883	
Nitrate	Potash	wet	M. B. T.	very fine
		dry		very good
Extract	Hemlock +	Na Cl.	wet	very good
			dry	good
Bitartrate	Potash	wet		Trans
		dry		Trans.
Bichromate	Potash	wet		very good
		dry		very good
Nitrate	Sodium	wet		good
		dry		good.
Phosphate	Potassa	wet		good
		dry		Trans
Ammonic	Bicarbonate	wet		good
"	"	dry		good

J. S. Otis & D. Kellogg July 5 1883 Pitt. & Ft.

Sulphuret Potassium	wet	Fair.	
	dry	Fair	
Microcosmic salts	wet	Nothing	
	dry	Nothing	
Acid. carbonic	wet	~~Nothing~~ Fair	
	dry	Good	
Iodide of Ammonia	wet	Good	
	dry	Good	
Double Sulph. Copper & Ammon. goods with point touching paper	wet	Poor	
	dry	Good	
Bi-sulphate Soda	wet	Poor	
	dry	Good	
Carbonate Ammonia	wet	Good	
	dry	Good	
Manganous Acetate	wet	Good	
	dry	Good	
Boric Acid —	wet	Nothing	
	dry	Good	
Acetate Copper	wet	Good	
	dry	Good	

J. S. Ult E. D. Velloff July 3 - 1883

Sulphate	Manganese	wet	Good
Holes ~~[illegible]~~ in a line		dry	Good
Bromide	Magnesium	wet	Nothing
holes in a straight line		dry	Good ~~[illegible]~~
Prussian	Indigo	wet	Nothing
Holes in a line		dry	good
Prussian	Indigo + Ira Cl	wet	Good
		dry	~~Fair~~
Stannous	Acetate	wet	Fair
		dry	Fair
Chromate	Potassium	wet	good
holes in a line		dry	Good
Nitrate	Caffein	wet	nothing
		dry	Good Heads Good Wide
Nitrate	Caffein + Ira Cl	wet	Fair
		dry	Good Heads a little
~~Chromate~~	Oxide	Cobalt	wet. nothing
~~strong~~ Holes in a line		dry	Good
Oxide	Cobalt + Ira Cl	wet	Fair
		dry	good Holes in line

J. Fels E. D. Mellor July 5 1882

Chloride Extremely Mt. Mr. Good
Holes in line dry Good

1 Gum Myrh not Nothing
dry Good holes in line

1 Gum Myrh & Ma Ch not Tear
good with point on contact
dry Good holes in line

1 Nitrate Cobalt not good
dry good Holes in line

1 Hypo phosphate Iron not Nothing
but good with Point touching paper
dry good holes in a line

Z. F. Ob E. Stallings July 6 1883

Sulphate Magnesia	wet	Good	Fair
	dry	Good	Color in line
Nitrate Barium	wet	Good	
	dry	Good	Color in line
Protochloride Tin	wet	Good	
	dry	Good	Color in line
Yellow Oxide	wet	Nothing	
	dry	Fair	
Sulphur	wet	Poor	(dirty) spreads
	dry	very Fair	
Oxide Tungstate	wet	Nothing	
	dry	Good	Color in line
Egg Albumen	wet	Good	with Pt. touch
	dry	Good	but color spread a little
Blood Albumen	wet	good	with Pt touch.
	dry	Good	but shades spreads a little
Antimonic Acid	wet	Nothing	
	dry	Fair	
Oxalate Cerium	wet	Nothing	
	dry	Fair	
Sulphate Copper	wet	Good	
	dry	Good	color in line

J. F. Ott July 8 1883 Coff F. 21 W 63 g

Monochloride wet Poor Work
dry good when very strongly

Chloride Calcium wet ~~Fair~~ good ~~[illegible]~~
~~Poor Work~~ dry good

Acetate Barium wet good
dry good

Lanthanum & Didymium Acetates wet good
dry Good

Aluminium Sulphate wet good
dry Good

~~Calcium Nitrate wet good~~
~~dry~~

Cadmium Acetate wet good
dry good

Magnesium Acetate wet good
dry Good

Zirconia Acetate wet good
dry Good

Zinc Acetate wet good
dry Good

S. O'Kelley · J. S. O'K July 6 1883

Manganous Nitrate Good ~~Fair~~ Poor
dry Good

Chloride Zinc wet Good
dry Good

Cerium Acetate Good
dry Good

Acetate Lime wet Good
dry Good

S. O'Kelley July 7 1883
Aluminum Nitrate wet Good
dry Good

Sugar Alcohol wet Fair
dry Poor

Nitrate Ammonia wet Goods
dry Poor

Barium Chloride wet Good
dry Fair

Stannate Lime wet Good
dry Fair

Calcium Acetate wet Good
dry Fair

Magnesia Nitrate wet ~~Fair~~ Good
dry Good

9. 5.00 E.A. Kelly July 7 1883 M. M. F.

1	Cadmium	Acetate wet Good dry Good
1	Titanium	Acetate wet Good dry Good
1	Titanium	Chloride wet Good dry Good
1	Stannous	Nitrate wet Good dry Good
1	Aluminium	Chloride wet Good dry ~~very Tan~~ Tan
1	Aluminium	Acetate wet Good dry Good
1	Strontium	Chloride wet Good dry very Tan

E. O. Kellogg J. S. O. July 9 1883 M. M. M. 5th

Uranine wet Good
dry Good

Zinc Sulphate wet Poor
dry Good

Silver Cyanide wet Fair Decomposed Ammonia
dry Fair

Saffron + Salt wet Very Poor
dry Fair

Acetic Sol. Cobalt Chloride wet Good
dry Fair

Acetic Sol Cobalt Chloride + NaCl wet Good. Improvement than preceding
dry Good

Acetic Sol Cobalt Chloride + Chlorate Potash wet Good but with Marks
dry Fair Holes for a few minutes do.

Acetic Sol. Chloride Cobalt + Chlorate Potash + NaCl wet Good – Fine Marks –
dry Good edges of Holes turn green but again fades away

Chlorate Potash wet Good marks ~~but~~ ~~[illegible]~~ dry Poor – small holes –

2 F. 00 E D Pullow July 9 1895 Fr

Chlorate Potash + Salt wet [illegible] good
fine mark but not very black
dry Good but not very black Holes

Sal Ammoniac wet Good mark
point much very dim
dry Poor dim holes

Permanganate Potash Fine mark
both fader but dry not dim mark any
dry Poor

Permanganate Pot + Na Cl wet Fine Mark
fader little but does not dim the mark
dry Nothing

Sodium Tungstate wet Poor - good
with Point touching Paper
dry Poor dim Holes

E. Sullogs July 16 1883 Pm 11. P.

Tried Cadmium Sulphate wet
Time mark 7 light dry very Fine J.F.H.

Cadmium Sulphate + NaCl wet gives
good mark but not as black as
preceding dry it gives a good
black hole but not in a very straight
line.

Cadmium Bromide wet gives a dim mark
dry Fine mark

Cadmium Bromide + NaCl wet gives
Plain mark but not fine. dry good
black holes but not in straight line

Cadmium Chloride wet gives no mark
at all. dry holes go in a good straight
line but not very black.

Cadmium Chloride + NaCl wet gives
no mark except when Point touches
paper. dry the mark is about same
as in preceding

Acetate Barium wet gives good
plain mark but not regular
Dry gives very plain holes
but not in a perfectly straight
line

J. F. Ott July 10 1893
E. D. Kellogg, M. M. F.

Acetate Barium + Nitrate gives very plain + fine marks but not as black, or irregular as in preceding
Dry gives holes but not as plain nor as straight as in preceding.

Nitrate Lead. wet gives good fine marks but in some places darker than others
Dry very black holes but not in straight line enough

Nitrate Lead + Salt gives about same result wet but dry the holes are in a straighter line.

Cadmium Oxide wet gives no mark at all dry shows blackened holes but not straight line.

Cadmium Oxide + Salt wet gives very fine plain marks but wider
Dry about same as preceding

Acetate Aluminia wet gives no marks at all but dry it gives black holes in a crooked line

Acetate Aluminia + Salt gives a very good marks when wet.
Dry about same as preceding

E. D. Kellogg July 10 1883 J. F. Otis

Cadmic Sulphide wet gave Plain mark but not fine or even
Dry: Blackened Holes in ~~fa~~ very fair line

Cadmic Sulphide + Salt wet. gave very dark line but broad
Dry Blackened holes but not as straight line as the other.

Zinc Oxide wet gives plain mark but very uneven dry it gives very good mark.
Zinc Oxide + Salt wet good mark. but rough dry good Mark

Precip Carbonate Zinc wet gives good mark but irregular
Dry Good marks

Precip Carbonate Zinc + Wall gives very plain mark
Dry Good plain holes and in very fair line

E D Kellogg July 10 / 1888 J. F. Ott

Iodide Cadmium wet gives fine mark dry also good mark

Iodide Cadmium + Nacl wet gives good mark also good mark dry

Citric Ammonia wet good mark but Irregular Dry very good mark

Citric Ammonia + Nacl good marks both wet + dry

J. F. Ott July 6th 1903
M. N. T.

Oxalate Lead wet gives no mark at all Dry it shows very good mark. Large black holes

Oxalate Lead + Salt wet. fine mark but not very plain.
Dry good mark. medium size holes

Carbonic Cadmium ~~wet~~ gives nothing till it partially dries off then ~~commen~~ turns holes
Dry very good holes - large, black + in a line.

Cadmium. Carbonic + Salt wet fine mark and quite plain ~~dry~~
Dry. very ~~good~~ mark large black holes in a good line.

Sulphate Calcium gives no mark till nearly dry then begins to make holes and when perfectly dry makes very good black holes

Sulphate Calcium + Na Cl. wet gives very good plain + fine mark
Dry Good large holes and black

E B Kellogg F.O.H. July 4 1883 M. M. T.

Sub Carbonate Bismuth wet gives ~~nothing~~ poor mark but as it dries off gives larger + larger holes till dry when it gives large, black holes and in very straight line

Sub Carbonate Bismuth + NaCl wet gives very good fine mark but irregular
Dry large black holes in very fair line

Carbonate Lead gives poor mark till nearly dry then very fair
Dry very large holes and in very good line.

Carbonate Lead + NaCl wet nothing
Dry very good mark holes large + Black

Caustic ~~Bismuth~~ Barium wet very Plain mark but very broad
Dry large black holes in very good line

Caustic Barium + NaCl wet very fine mark + very Plain
Dry medium holes + Black

Ed Kellogg J. F. Otto

Oxalate Ammonium wet: Spins
marks but broad + irregular
Dry very fine large black holes and
very strong + line

Oxalate Ammonium + Na Cl wet
No marks except when point
touches paper then very good
Dry very fine marks holes larger
blacker + in a straighter line
than the one preceding which is very fine

Hyposulphide Soda wet very fine marks
but ~~not~~ irregular dry it makes
large black holes in very bad line

Hyposulphide Soda + Salt wet
Good fine line ~~or~~ but not unless
it is very wet.
Dry very good, large black
holes + very good line

J. F. Ott July 12 1883
E. D. Kellogg M. & T.

Phosphate Ammonium wet gives very plain marks but very broad
Dry very large black holes in good line

Ditto + salt wet gives very good marks but uneven
Dry medium holes, black + in good line

Oxalic Acid wet Fair marks. (wet + dim) Dry very good marks large black holes + very good line

Ditto + salt wet fine marks but not plain
Dry large holes in good line

Arsenate Copper wet. No Marks
Dry medium holes but very plain and in very good line

Ditto + Salt wet gives very fine and quite plain marks but rough
Dry ~~very~~ medium holes and very fair line

J. F. Ott July 12 1893

Dipsphosphate Sodium wet very dim + broad line also irregular

Dry Small holes + not very plain but fair line

Ditto + NaCl wet fine line but very uneven + dim

Dry medium holes in very fair line

Caustic Potash wet very plain but wide + uneven

Dry Medium holes quite plain and fair line

Caustic Potash + Salt wet very black mark but uneven

Dry medium holes quite plain and good line

Red Sulphuret Antimony wet bluish tint to Paper but but very plain + very broad

Dry medium holes + very plain + black

Ditto + NaCl wet fine white mark very regular + plain

Dry large black holes in fair line

J. F. Ott July 12 1893 Excellent
M. D. Arsenate Antimony mix gives
No result at all but dry it shows large holes plain but not very black + fair line

Arsenate Antimony + Na Cl wet gives fine mark but scarcely perceptible except when front touches paper then there appears very good line
Dry about same as preceding excepting straighter line

Carbonate Copper wet shows nothing at all but dry there are very good holes + very fair line

Ditto + Salt wet very fine line but very irregular.
Dry large ~~holes~~ black holes + very fair line

Fluoride Calcium wet nothing
Dry medium holes dim but no good line

Ditto + Salt quite plain depression in paper also irregular fine line
Dry small holes quite black + very fair line

E. D. Kellogg July 12 1883 J. F. Ott 93

Arsenious Acid wet H O
M U T
mark & ebb
Dry very small + dim holes
poor line.

Ditto + Salt wet fine mark
but irregular
Dry very small holes dim
but good line

J. F. Oil July 13

Oil. Cassia M. N. T. Benzine dry

Poor mark - small dim holes

Oil Cubebs + Benzine ~~dry very~~

Fair mark small but. Plain holes

Tusel Oil + Benzine. dry very

Fair mark. small but Plain holes

Oil Wormseed + Benzine dry

very Fair small but plain holes

Oil Lemongrass + Benzine dry Fair

mark ~~dim~~ small but plain holes

Oil Citronella + Benzine dry Poor

small + very dim holes

Oil Tansy ~~dry~~ + Benzine dry

Poor small dim holes

J. F. Ott July 12 1883 E. D. Williams M.N.F.

Tried saturating a piece of cloth with ink & then passing sparks through from drum to needle, calculated to leave sparks bring up with it enough ink to blacken edges of holes. did it very well but ink was apt to run through and spread over paper

July 16. E. D. Williams

Tried coloring linseed oil with red Lead & passing cloth in same way but it did not work at all

J. F. Otto July 18 1883
Tried red Aniline & water mixed
a cloth fixed in same way as
preceding. It gave very plain
black marks but not due
I think to the aniline but to
the water making good conductor
for sparks but poor for heat
so the paper was burned
Used brown Legal Cap paper

Tried also paper right on
calender without anything else
which gave very good marks
both when Legal Cap or thin
note paper was used

Tried also rapping drum
in cloth & putting nothing on
it then paper over it & passing
sparks through which
gave nothing at all
I then soaked ~~paper~~ cloth
in a solution of Caustic Soda
& it gave very fine marks as

E D Kellogg, July 18 1883
good as first one on page 99

J. F. Abb

Aug 27. 1883

Boiled Linseed oil to thick paste then dissolved in, Carbon, Bisulphide, Chloroform, Sulphuric Ether, and Benzole covered tissue paper stuck together dried and carbonized

J. F. Ott

Sep 5. 1883

Parchmentized tissue paper then washed dried and pasted together with Gum Tragant with gave very good results

Sep 5. 1883

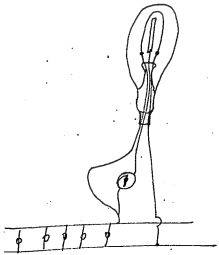
Parchmentized tissue paper laid on top of each other and left lay for several hours then washed and dried and found to a solid mass

Oct 8. 1883

J. F. Ott

Mr Edison ordered a working model made to indicate pressure across the line, according to sketch given to me dated Oct 8. 1883.

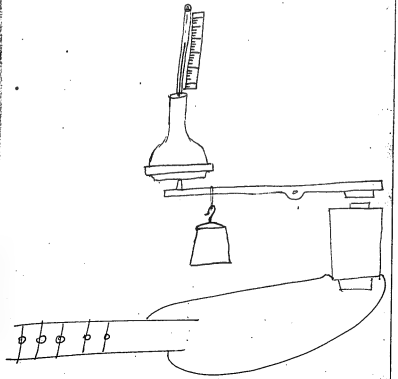
Lec. Book No 204 page 67



Oct. 8, 1883

J. F. Ott

Made working model to indicate pressure on line after following manner



Oct 15. 1883

Parchmentized tissue paper pasted together before dryed with Gum Tragant, heated and air dryed and found they adheared together without slightest flaw in it.

J. F. Ott

Oct 22. 1883

Bought and tested different kinds of paper and found the English the best. it being more even in its structure.

J. F. Ott

Oct. 83.

Parchmentized tissue paper put them on top of each other, then put under pressure and heated, and found them stick together

J. F. Ott

Nov 22. 83.

Parchmentized tissue paper fastened them together with Gum tragant by subjecting them to pressure and heat when dry pumiced stoned them of smooth making the sheet a perfect even structure

J. F. Ott

Nov 22. 1883.

Made several sheets with 10. and 11. sheets on top of each other winding them together as one sheets and sent to lamp factory to ~~make~~ cut up into filiments and put in lamps

J. F. Ott

Nov 23. 83

Dissolved Resin in Alcohol and imessed parchment strips and fastened together,

Also the unparchmentized strips, by subjecting them to pressure and heat

Also dissolved boiled Linseed oil in Ether and fastened sheets together

Also dissolved Resin in Benzine

J. F. Ott

Volts and resistance (3) Three of the lamps made of parchment paper Carbons at 16 Candles

Volts	Res	Tot Res	Amp	Lamps per H.P.	Candles per H.P.
132.5	242	3206	.589	18.89	165
126.5	237	2989	.534	11.04	177
129.5	239.1	3079	.561	10.66	171

Size of Carbon 6 $\frac{13 \times 20}{1000}$

Life of each lamp at 64 candle power

Hr	Min				
		4	45	8	95
1	10	5	90		
2	20	6	90		
3	55	7	95		

this test made at Lamp factory

J. F. Ott

Nov 23. 83

Plated Lead safty catches for strict means by drilling small holes in them plating them with copper making a perfect contact without riveting plates on

J. F. Ott

Dec. 7. 1883

D. F. Ott

Made a solution of resin and alcohol immersed a piece of bamboo paper in it. drying the same in the air after drying passed it for the purpose of making a carbon filament for lamp factory to be carbonized.

Also made sol. of turpentine and resin for the same purpose pressing it after drying

Also one of gum tragacanth and ammonia pressing after drying

Dec. 10 1883

J. F. Otts

Made a boiling solution, dephlegmated sugar and water; immersed bamboo paper leaving it in for about fifteen minutes to get the solution well through it. Then took it out and let it dry in the air after drying I then passed it and sent it to lamp factory to be carbonized

Also made sol of gum dextrin and one of starch

Dec 21, 83.

Stopped at lamp factory and called for bamboo paper that were carbonized; and discribed on page above

J. F. Otts

Went to slaughter house to get samples of horn bladder and Intestines Cissel, softened them in Linseed Oil, and pressed them in sheets then cut them as samples to send to Lamp Factory to be Carbonized

Dec .83.

J. F. Off—

Made solution of the following ingredients for the purpose of making Carbon filliments from

Glue and Gelatin
" " Charcoal

Glue and Gilotin and Charcoal

" — " Burnt Sugar

" — " Flour —

" — " Dextrine

" — " Resin

J.F.Oth Dec. 27. 83.

Mixed Gum Dextrine & Flour

Flour Water and lamp black

" — " " Burnt sugar

" — " ——————

" — " and sugar ad soot

" — Glue water

" — Olive oil

" — Gum Tragacant

" — Watts Charcoal

" — Plumbago

" — Drop black

Flour – Collodium

Flour and soot sol of Glue

" Kerosene and Resin

" Pearl Sago gummy

" Fish Glue gummy

" Linseed oil

" Glue water & Sol

All compounds up to present time containing oil make them brittle

Dec. 28. 83.

Also Lamp black, Drop black, Plumbago,

Dec. 28. 87

Flour Cocoa butter.

" Milk sugar

New York Jan 4 1884
Mr. E. Jones

Tried the following ingredients with (Starch as a base) for the purpose of making carbon filaments.

Sol. Starch gum tragacanth and glue water, poured out in sheets and left to dry. This was no good

Sol. Starch tragacanth & gum arabic, poured in sheets. This also was no good.

Starch sugar and flour boiled together into a thick paste or dough then rolled into sheets, and filaments punched from them. This worked very well

New York Jan. 4 1884
M M Force

Molasses & flour boiled together into a thick paste then rolled into sheets, and filiments punched from them, this also worked well

---

Starch and gum tragacanth boiled together, flour added often to thicken to a dough then rolled into sheets and filiments punched from them. this made very fine sheets

Jan. 5 1884
M M Force

Starch and gelatin boiled together and made into a dough and sheets made from this also and filiments punched from it

M. Ch Foster

Starch boiled, gum tragacanth added then thickened to a dough, with powered starch this was no good as the powder starch made it to short same as when mixed with oils

---

Starch gum tragacanth and flour mixed evbr. to a dough. Then rolled into sheets and filaments punched from it this also made very fine sheets and filaments

---

Dec. Starch and sugar poured into sheets left to dry this was no good

New York Jan 5 1844
M. M. Fore

Starch sugar and darkum boiled to a thick paste rolled into sheets and filiments cut from it. also a paste made of starch and sugar. both worked very well

Jan. 7 1844
M. M. Fore

Starch powdered pearl sago and flour mixed to a dough then rolled into sheets and filiments cut from it.

Starch pearl sago flour and sugar made and cut into filiments.

Oct., Made from both but like all others where no good.

New York Jan. 9. 1884
M. R. Power

Starch gelatin and a minimum amount of molasses or syrup boiled together and thickened with flour to a dough, then rolled in sheets to .003. in thickness and filaments punched from it.

New York Jan 9th 84

Made filaments from the different combinations & sent them to lamp factory for carbonization.
Edw L. Hamilton.

Jan. 11th 84.

Starch, pearl-pago & molasses mixed together & formed into sheets; it keeps very pliyable. Hamilton

Hamilton Jan. 15th 84

Starch & arrow-root boiled together & poured into sheets; very clear when dry but also very brittle.

ditto - ditto plus tragacanth; same result.

Jan 15: 84

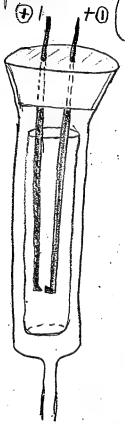
Starch & arrow-root boiled together & thickened to a dough with flour, then rolled out in sheets & filments punched from it. Hamilton

Hamilton Jan. 17th 84.

Starch & arrow-root boiled together & a small amount of molasses mixed in to keep it from getting brittle; poured out in sheets & kept pliable for 8 or 10 days.

New York Jany 10 1878

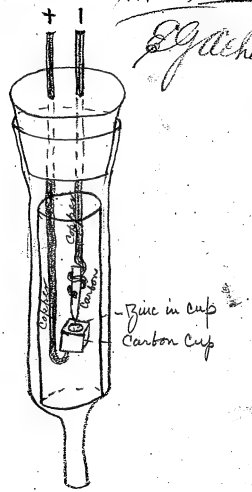
For producing Gold Foil by Electro — vacuo deposit —

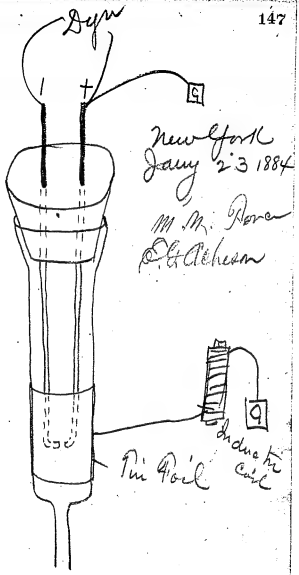


New York January 11 1884

W. M. Bra

E. G. Acheson

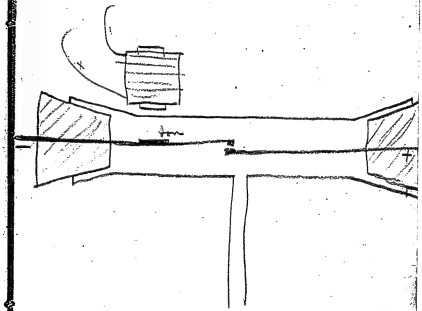



Dyn
+
G
New York
Jany 23 1884
M M. Rowe
E. H. Atkeson
G
Induction Coil
Tin Foil

New York Jany 30 1886

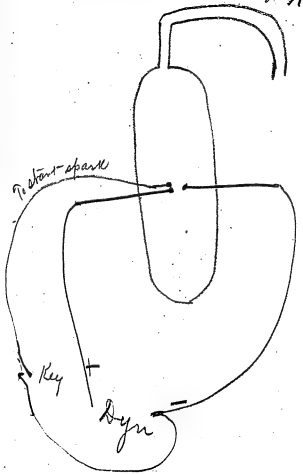
E. Acheson

M. M. Poser



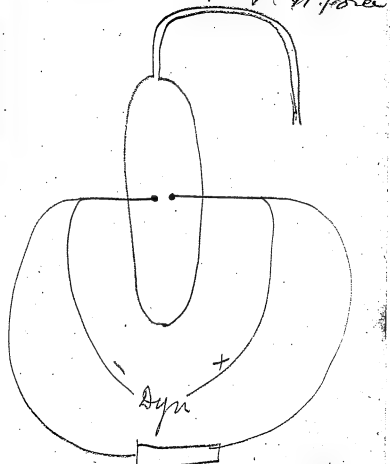
New York January 31

Electrophorus
Mr A Foner



New York Jany 31 1884

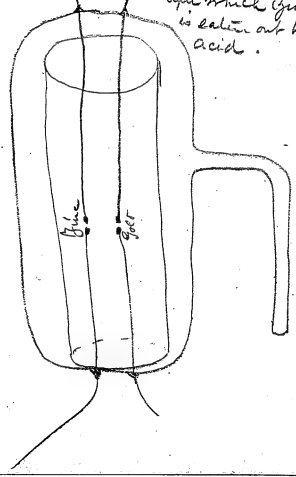
Elisha Gray
Wm H Power



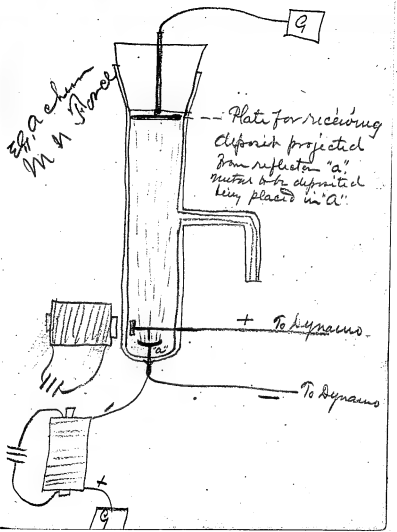
New York January 31 1884

Ely A. Cheson
M. M. Pore

For depositing alternate layers of Gold and Zinc after which Zinc is eaten out by acid.

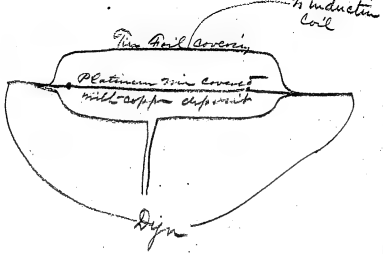


New York Jany 31 1886



New York Feb 2 1884

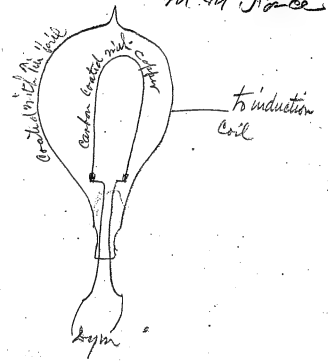
M A Bonn



Edg Acheson

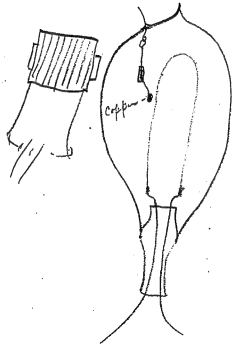
New York Feb 2 1884

E. L. Acker
M. M. Force



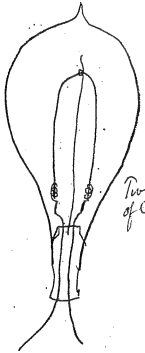
New York Feb 5 1884

E G Acheson
M A Force



New York Feb 5 1884

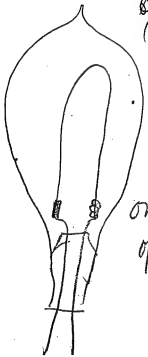
E. G. Acheson
M-N Force



Two Force clamps of Copper

New York Feb 5 1884

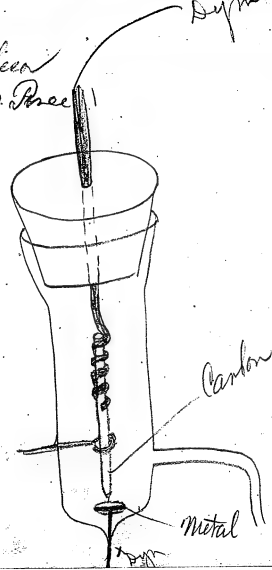
Elizabeth
M A Force



One loose clamp
of Copper

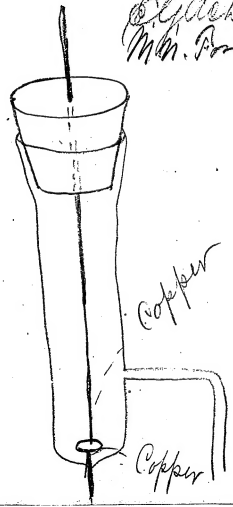
New York Feb 6 1884

Witnesses
M. M. Pace

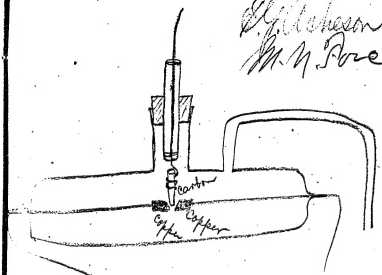


New York Feb 6 1884

Elijah Dunn
Min. Power



New York Feb 8 1884



HYGROSCOPE →

New York Apr. 11 1884

Martin N. Fraser

Experiments on combinations of different substances for the purpose of making carbon filaments

Magnesia Oxide & Gelatin
" Chloride " "
" Acetate " "

April 5 1884

Dried film tragacanth are marvellously sensitive to moisture fingers 3 inches away throw it into violent contortions apply it to Hygroscope — TAC

M N Fraser

284